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Armedea Project

Vila Franca do Campo, São Miguel, Azores.
2015 Fieldwork.

Introduction. In September 2015, the Armedea Project (Archaeology of Medieval Earthquakes in Europe, AD 1000-1550; www.armedea.wordpress.com) completed the first archaeological evaluation in Vila Franca do Campo, island of São Miguel, Azores (Portugal). The fieldwork was carried out by the Department of Archaeology of Durham University and the Centro de História d'Aquém e d'Além-Mar, Universidade Nova de Lisboa with the participation of the School of Environmental Science, University of East Anglia.

Vila Franca, the earliest capital of the Azores, was almost completely destroyed by a seismic-induced landslide which is believed to have caused the death of between 2,000 and 3,000 people on 22 October 1522 (Frutuoso 1981).

From 1967 to 1982, this site was investigated by Manuel de Sousa d'Oliveira, a Portuguese archaeologist who identified some remains of the ancient settlement. Sadly he never published his investigations. After this pioneering research, the Department of Volcanology of the University of the Azores produced a probabilistic model for the 1522 landslide, collecting evidence through coring and geological fieldwork. They estimated that the mass movement had an extension of about 4.5km² and a volume of 6.75x106m³ (Marques *et al.* 2009). This research, however, did not shed new light on the archaeology of the old settlement and what was known about the archaeology of the old Vila Franca do Campo was simply data extracted from interviews which Oliveira released to the local press (Bento 1989).

The 2015 archaeological excavation. The overall aims of the campaign were: (a) to understand the impact that the 1522 landslide had on the landscape of Vila Franca do Campo; (b) to evaluate the possible remains of the town under the landslide; (c) to investigate the archaeological evidence related to the aftermath of the 1522 disaster; (d) to study the geomorphological characteristics of the landslide; (e) to analyse the material culture yielded by our excavation; (f) to carry out a preliminary assessment of any material recovered during the previous excavations and now stored at the local museum in Vila Franca.

Our fieldwork has involved the excavation of 17 trenches across the eastern part of the modern Vila Franca do Campo spread within 5 different excavation areas (**fig. 1**), in the main zone to be known to be affected by the 1522 landslide (according to the reconstruction of Marques *et al.* 2009 and the observations of Oliveira in Bento 1989).

The 1522 landslide deposit was identified in all the 5 excavation areas and, in particular, within 8 of the excavated trenches (**fig. 2**). It has a mean thickness of around 1.5m while the pre-1522 buried soil lies at a depth of around -2.00m from the modern surface. Detailed sediment logging was undertaken to capture textural variations within the local deposits and for comparison between excavation areas spread across the town (**fig. 3**). More specifically the logging was aimed at documenting the interaction of the landslide with the archaeological features, the nature of the landslide basal contact, whether vertical

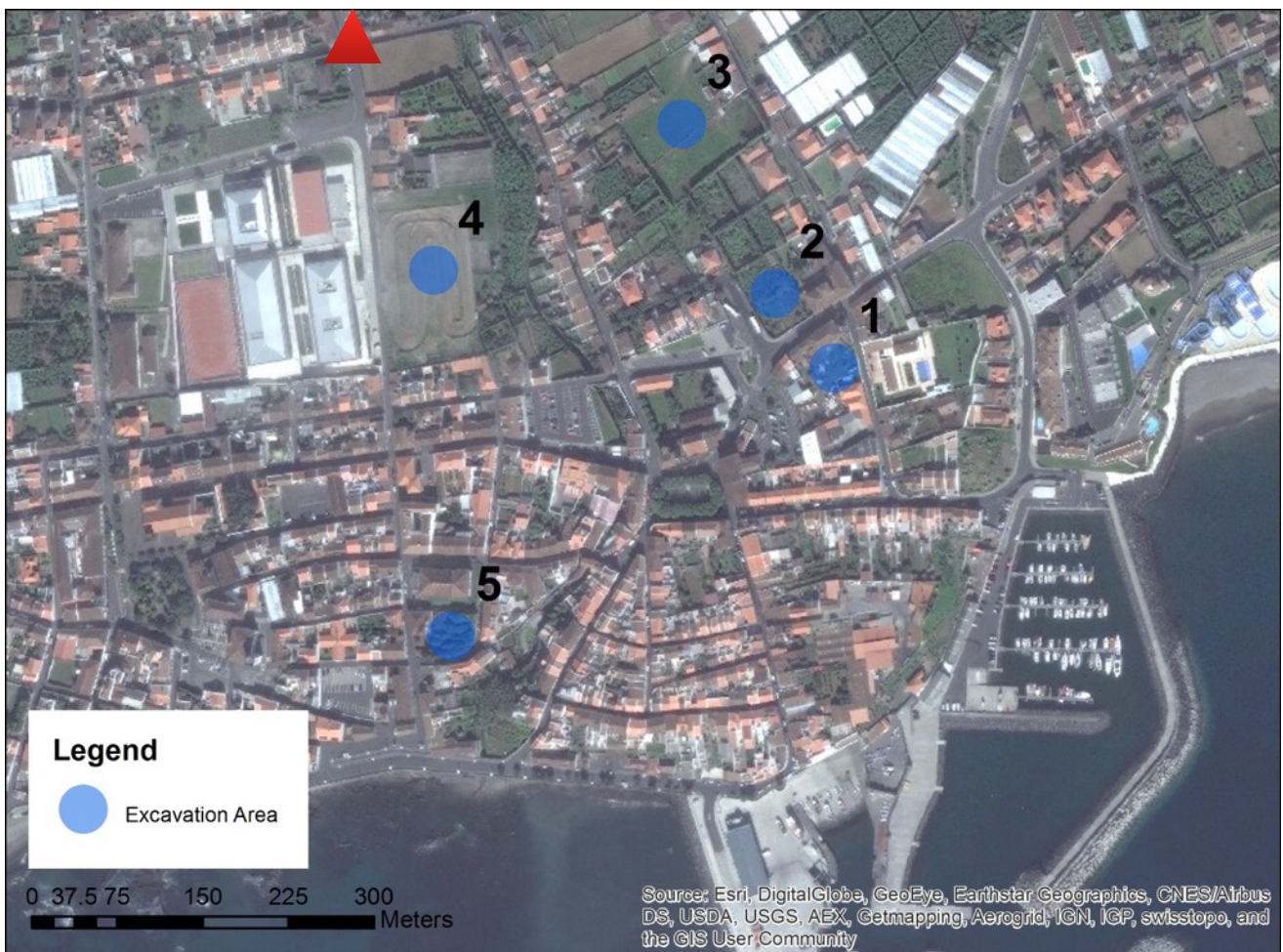


Fig. 1. Location of the excavation areas. The red triangle marks the exposed section where the 1522 landslide deposit is visible in the upper part of Vila Franca do Campo.

differences in grain size and sediment structure arose at each site, and any subsequent modification to the deposit by fluvial action. Observations are targeted at reconstructing the landslide dynamics and impact on the local landscape. There were distinct differences in the deposits logged in trenches in the town centre compared with a vertical exposure of the landslide on the peripheries of the debris fan. In the central areas, the deposit was massive in texture, vertically less



Fig. 2. Area 1, Trench 4. The 1522 landslide deposit with boulders at its base. In the section, the buried soil is clearly visible at the bottom.

heterogeneous with a near-horizontal sharp contact between the landslide and ash deposits from the Furnas C eruption ($80 \text{ AD} \pm 120$). Observations and clast fabric were diagnostic of deposition by a debris flow. Conversely, the deposit at the peripheries of the debris fan contained scours and structures indicative of fluctuations in the rheological behaviour of landslide to include pulses with lower sediment concentration. Samples from

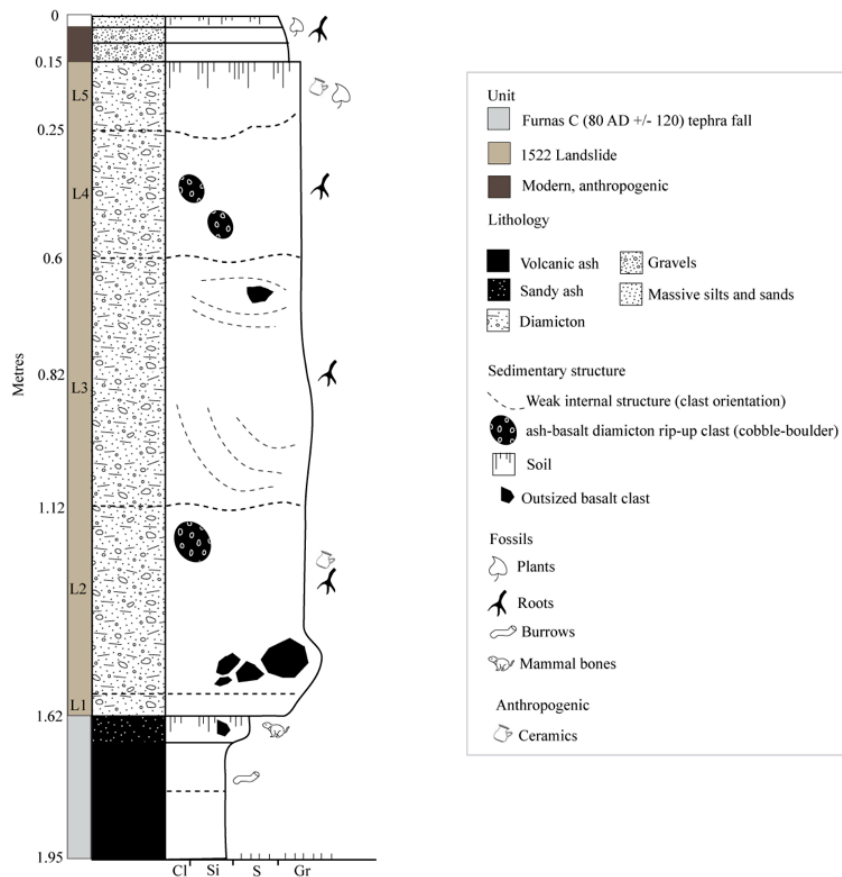


Fig. 3. Area 1, Trench 4. The clast fabric measurements were collected for L2-L5 and L1-L5 were sampled for grain size and composition analysis. The surface of the deposit including L5 shows signs of anthropogenic modification. It is possible that the landslide deposit was thicker in this location. Drawing by M. Froude.



Fig. 4. Area 2, Trench 5. The 1522 landslide deposit (5015) eroded by later water channels filled with gravel and sandy laminar layers (5005, 5020).

the deposit are currently being analysed to assess grain size and composition, to ascertain the bulk characteristics of the flow at different locations and consider the physical impact of the landslide on the settlement of Vila Franca.

In one of the trenches (T5), the excavation has documented the impact of the landslide deposit on the hydrology of the area, identifying the appearance of two new water streams on the new surface created by the mass movement (**fig. 4**).

Little evidence of the pre-1522 occupation has been identified in the trenches located just outside the modern town, suggesting that this area was being cultivated on the fringes of the town in the late 15th-early 16th centuries (**fig. 5**). Archaeological contexts related to the pre-1522 settlement have been found only in one of the trenches (T17), one which is located within the modern town.

The same trench also confirmed that the reoccupation of those areas affected by the landslide was fast (**fig. 6**); the trench found a metalworking furnace which produced fuel



Fig. 5. Area 2, Trench 7. The pre-1522 surface sealed by the landslide. Charcoal and occasional animal bones were found here, suggesting that this area was probably cultivated on the fringes of the town.

ash slags and a rubbish pit (**fig. 7**). This pit produced 44 sherds of pottery (1.3kg), including 16th century imported wares, such as a Tuscan maiolica sherd (Montelupo-type; **fig. 8a**), two Seville green-glazed large bowls (or 'lebrillos') and two other possible Seville Morisco Wares (see http://community.dur.ac.uk/spanish.pottery/index_files/Page1485.htm).

Finds. A total of 1,817 items were recovered during the 2015 excavations. They were washed, quantified and then deposited at the local Museum in Vila Franca. Most of the material is ceramics: pottery vessels (741 sherds, weighing 8.7kg) and also building materials, especially roof tile (502 sherds, 24.3kg); but animal bones (464 fragments), including a complete skeleton of a cat, metal items (55, mainly iron nails), shell, glass, mortar, slag and stone were also found.

Museum finds. Thanks to Senhor Ricardo Rodrigues we were able to assess the material recovered by Sousa d'Oliveira in the 1960s-80s, material which is now in store at the Municipal Museum of Vila Franca do Campo. A preliminary inspection of this material confirms that d'Oliveira must have reached the earliest levels of occupation of Vila Franca, given the presence of pottery clearly dated to the 15th century. At least two examples of



Fig. 6. Area 5, Trench 17, Section looking W. The arrow indicates the residual 1522 landslide deposit, cut by the rubbish pit 17015 on the left.



Fig. 7. Area 5, Trench 17. The rubbish pit 17015 under excavation. Note the small furnace 17012 on the left.

Spanish lustrewares made in the Valencia region date to this century and they are both decorated with the briony pattern (**fig. 8b, 8c**). Further imports of the late 15th-early 16th century are the Seville wares, including 'cuerda seca' and blue-and-purple dishes. A further sherd from a Montelupo-type maiolica of the early 16th century. Most of the material, however, are redwares both of local production and also coming from mainland



Fig. 8. A: Early 16th century Italian maiolica from Tuscany, from Trench 17 (context 17015); B, C: Valencian lustreware of the 15th century from d'Oliveira excavations

Portugal. The collection is an important one and its study would shed new light into Vila Franca's history.

Future work. This preliminary research allowed us to open an exceptional window on the effects of the 1522 seismic event, but also on the reaction of the local population of the ancient Vila Franca. Since the 'new' Vila Franca do Campo was funded along the western side of the landslide (for instance, the convent of São Francisco was completed immediately after the earthquake, in 1525), this context can be seen as an extraordinary example of resilience of that community, who faced another destructive earthquake shortly afterwards in 1536.

Future work to continue and develop this first season of archaeology will be planned in collaboration with the Municipality of Vila Franca in order to extend and enrich the small window already opened into the past through this pilot project. In addition, further studies on the material culture of Vila Franca will be jointly undertaken by the Durham University and the Universidade Nova de Lisboa. Specific laboratory analyses are already under way in the Department of Archaeology of Durham, and they are mainly focused on grain size fraction analysis of the landslide deposit, OSL dating and phosphate analysis of the pre-1522 buried soil.

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